ENHANCING RESILIENCE TO CLIMATE-INDUCED CONFLICT IN THE HORN OF AFRICA

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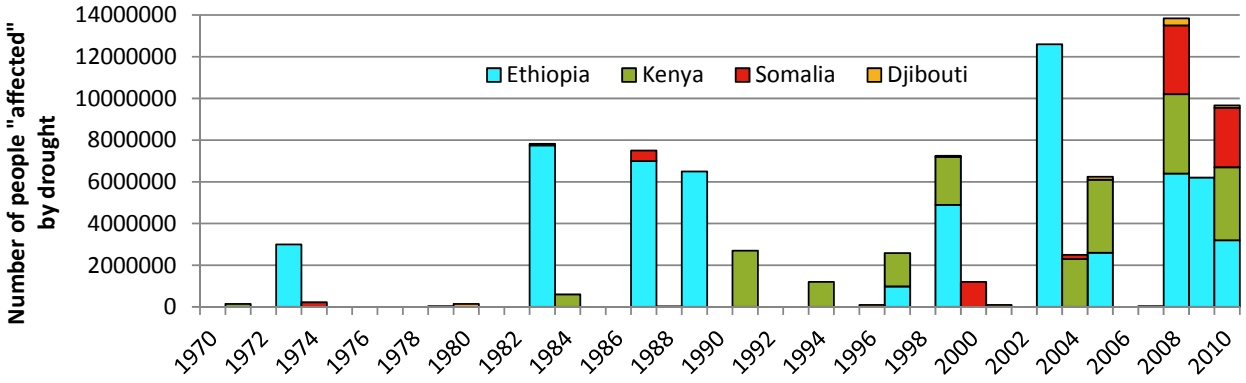
INTRODUCTION

The interaction between climatic shocks and conflict has long been thought to have negative effects on vulnerable communities. Climatic shocks are considered to be one of the root causes of conflict, especially in resource-constrained settings. At the same time, conflicts tend to exacerbate existing vulnerability, leading to poverty-conflict traps at the household, community, and national levels. Large parts of the Horn of Africa—including Djibouti, Ethiopia, Kenya, and Somalia—are susceptible to these types of traps, with Somalia epitomizing the complex links among climatic shocks, conflict, and weak governance. Worse, climate change and continued population growth already appear to be producing more frequent catastrophic events in the Horn, with disastrous consequences in arid and semiarid lowland areas (Figure 1).

Figure 1 Estimates of the number of people in arid and semiarid lowlands adversely affected by droughts, 1970–2010



Source: Estimates from Headey, Taffesse, and You, based on data from CRED.[1]

Recent research sheds new light on the relationships among climatic shocks, conflict, household and community resilience, and policy interventions that can break the vicious climate-conflict cycle. This brief reviews this research and outlines its implications for regional development strategies, with special attention to pastoralist populations, who appear to be increasingly vulnerable.

CLIMATIC SHOCKS, CONFLICT, AND RESILIENCE

A large and growing empirical literature has identified a strong relationship between warming and civil war in Africa. A comprehensive meta-analysis of this literature by Hsiang, Burke, and Miguel examined 60 of the most rigorous quantitative analyses—many of them conducted in Africa—and found causal evidence linking climatic events to human conflict.[2] This literature sheds little light on the mechanisms linking climate shocks to violence, however.

Newer research reveals more about these mechanisms in East African contexts. First, Maystadt and Ecker found that in Somalia, drought incidence and length are causally related to regional and temporal variations in violent conflict outbreaks through the mechanism of livestock price shocks.[3] They hypothesized that livestock price shocks drive drought-induced conflicts by reducing the opportunity costs of participating in conflicts. The strength of the relationships between drought and conflict is sizable, suggesting that climate change in this region, without offsetting interventions, will exacerbate the risk of conflict.

Second, Calderone, Maystadt, and You found that temperature anomalies strongly affect the risk of conflict, which is expected to increase by 21 to 30 percent under a median climate change scenario.[4] They also emphasized the greater vulnerability of areas with more pastoralists, less irrigation, and greater distance to local markets. Climate change and population growth have increased the stress on water and feed resources, while various institutional factors have constrained pastoralists' mobility and limited their political representation.[5]

POLICY OPTIONS FOR INCREASING THE RESILIENCE OF EAST AFRICAN PASTORALISTS

Climatic shocks, then, are an important cause of conflict, and climate change is likely to exacerbate the risk of conflict. We cautiously outline different policy options under the following categories: conflict prevention and mitigation, emergency assistance and safety nets, interventions to reduce ex ante and ex

post exposure to climatic shocks, and broader development efforts aimed at building longer-term resilience.

Conflict Prevention and Mitigation

While climatic shocks generally tend to increase the risk of conflict, this effect varies tremendously, with the main mediating factor likely being institutional arrangements. Strengthened dispute resolution mechanisms and sound natural resource management in fragile states might significantly help to reduce the risks of conflict and violence. Blattman, Hartman, and Blair offer evidence in favor of improving local dispute resolution systems in African countries with weak rule of law.[6] They evaluated an education campaign promoting informal negotiation and mediation to help parties reach self-enforcing bargains faster than courts could. In treated communities, land disputes were 29 percent less likely to remain unresolved at the end of the year, and property destruction decreased by 32 percent.[7]

Improved natural resource management could help prevent disputes from even starting.[8] A recent study of pastoralists from southern Namibia suggested that resource scarcity increases the occurrence of harmful behavior but that communities in resource-scarce areas still seem ready to cooperate when substantial net gains can be realized.[9] Accordingly, a rising number of policy-oriented institutes recommend creating local committees to manage water and forage resources.

Emergency Assistance and Conditional Safety Net Programs

Another strand of the literature examines food and cash aid programs' effectiveness in helping rural populations cope with both climate and violent shocks. In famine and postconflict situations, food assistance has traditionally been the most common safety net program. However, outside of its humanitarian role, there is widespread skepticism regarding its possible influence on incentives to work, on local food prices, and on crowding out of private transfers. Gilligan and Hoddinott examined the impacts of food assistance in Ethiopia after the 2002 drought and found that it played an important role in improving food security and household well-being in the short run.[10] Using panel data on Ethiopian and Kenyan rural groups, Lentz and Barrett suggested that food-for-work programs worked effectively for pastoralists without affecting private transfers in any meaningful way.[11] Sulaiman evaluated a transfer program in South Sudan and reported a significant negative impact on per capita household income (though largely through a decline in child labor) but positive effects on school enrollment for girls and housing quality.[12]

Nevertheless, traditional food aid programs have been criticized as slow and costly. Donors and governments therefore increasingly distribute cash as a substitute for or complement to food transfers and also look to move away from ad hoc humanitarian assistance toward more regularized (and conditional) social safety nets. Macours, Premand, and Vakis suggested that conditional cash transfers can help households manage weather risks—especially when combined with productive investment grants to help them diversify their economic activities.[13] Mude, Ouma, and Lentz showed that cash transfers can be successful even in remote and infrastructure-deficient pastoral parts of Kenya, as long as the intervention is supported by an informed program design.[14] One of the largest and longest-running conditional transfer programs—the Productive Safety Net Programme (PSNP) in Ethiopia—has been praised for its capacity to build resilience at the household, community, and state levels. Recipients have seen increased food security and livestock ownership, and the program has helped build up local governance capacity and created improved infrastructure.[15] However, extension of the PSNP from the Ethiopian highlands to more pastoralist lowland areas has faced challenges, such as inadequate training of implementers, difficulty in reaching a dispersed population amid poor infrastructure and security concerns, and the potential conflict between programs that target the poor and traditional structures such as clans and sharing norms.[16] Hence, there is a need to rethink the design of safety net programs in pastoralist areas.

Reducing Ex Ante and Ex Post Exposure to Weather Shocks

Pastoralist communities accept periodic droughts as a feature of their region, and their nomadic livelihoods have historically been adapted to this climatic setting. Nevertheless, covariate weather shocks, coupled with increasing resource scarcity as a result of population growth and institutional constraints to mobility, are widely perceived to have made traditional coping mechanisms less effective.[17] These mounting constraints make it even more important to explore ways to cope with droughts through either ex ante interventions (early warning systems) or ex post interventions (weather insurance).

Mobility is the most important pastoralist means of coping with drought: local variations in rainfall and feed availability allow pastoralists to move herds to greener pastures.[18] However, space to move herds appears to be diminishing. One widely discussed constraint is land enclosures, with both pastoralists and more sedentary farmers (sometimes from outside) increasingly fencing off previously communal grazing lands.[19] Another is bush and pest encroachment, particularly the shrub *Prosopis juliflora*. Still another is mounting risk of interethnic conflict over grazing resources. These complex problems require a mix of interventions, both local and national, both legislative and administrative, in the areas of rangeland management, conflict resolution, and improved land and water management.[20]

With mounting constraints on where pastoralists can move, more effective early warning systems may offer greater benefits. Herders have shown that they can rationally revise their expectations and that they strongly prefer early resolution of uncertainty.[21] These findings are consistent with the well-documented ability of pastoralists to proactively prevent herd destruction through a variety of mechanisms: herd migration, changes in herd composition, market sales, and increased use of fodder.[22] The early resolution of uncertainty, coupled with the costliness of migration mistakes during the dry season as watering points decrease in number, points to the benefit of improving forecasts and their dissemination, through means similar to the Livestock Early Warning Systems (LEWS) and the Livestock Information and Knowledge System (LINKS).

Finally, recent years have seen considerable experimentation with index-based insurance, including livestock insurance in pastoralist areas. Chantarat and colleagues studied a novel index-based livestock insurance product's use among pastoralists in northern Kenya, where formal insurance markets are effectively absent.[23] Based on simulation results, the authors found that the product could remove 25 to 40 percent of livestock mortality risk. Janzen and Carter took advantage of a payout on this same insurance product, induced by the 2011 drought, to analyze the impact of the product on consumption and assets.[24] They suggested that insured households were on average 36 percentage points less likely to anticipate drawing down assets and 25 percentage points less likely to anticipate reducing meals

than their uninsured counterparts. Nevertheless, weather index insurance has encountered many challenges and still faces a number of uncertainties over issues such as persuading farmers and pastoralists to try the product, public-private partnerships, and the long-term behavioral impacts of insurance availability (such as moral hazard).

Broader Development Efforts as Longer-Term Resilience Building

Those who argue that vulnerability to shocks can be decreased primarily with sound and comprehensive development strategies generally call for long-term interventions aimed at strengthening local institutions and market functioning. For example, Headey, Taffesse, and You contended that education and infrastructure can attract people into nonpastoralist livelihoods, reducing their exposure to drought.[25] Improving the human capital of vulnerable households can have far-reaching effects, such as lower fertility rates, better health and nutrition outcomes, higher and more robust incomes, and improved gender equity. In addition, the age structure of pastoralist communities is young, so large investments in education could have sizable impacts within a generation. Although Headey, Taffesse, and You acknowledged the challenges of delivering quality education to seminomadic and highly conservative pastoralist communities, demand for education is increasing in these communities and recent decades have seen promising new experiments with boarding schools, mobile schools, and long-distance learning.[26]

The same authors were somewhat less enthusiastic about the potential for irrigation in lowland areas of eastern Africa.[27] Although irrigation expansion could in principle create viable livelihoods for as much as 11 percent of the projected 2020 population, this upper-bound estimate is based on optimistic and unlikely cost assumptions. In addition, it is unclear how much pastoralists themselves, as opposed to outside farming groups, benefit from irrigation investments.

Commercialization efforts could address the market failures often present in pastoralist areas, including uncompetitive markets, imperfect information, and incomplete insurance markets. Large-scale droughts are particularly harmful since they lead to sharp reductions in livestock prices, making commercial destocking unattractive, especially in less competitive settings. A number of remedies have been proposed, including improved livestock marketing information systems (such as LINKS) based on mobile technology, auctions instead of relatively uncompetitive spot markets, improvements in transportation infrastructure, and expansion of emergency destocking interventions.[28]

Finally, institutional reforms might be the most effective way to decrease long-term vulnerability in the Horn of Africa.[29] Pastoralist groups have historically been marginalized in high-level decisionmaking. Efforts to empower them in national decisionmaking processes could significantly alter this unfortunate status quo. Such efforts have already met with some success in eastern Africa, particularly in Kenya.

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NOTES

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